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cont 27 the piezoelectric element is in the form of a circular unimorph.

Piezoelectric-powered tire revolution counter, according to claim 1, wherein:

the piezoelectric element circular unimorph comprises a piezoelectric crystal formed as a circular plate; a support element formed as a circular plate and bonded to a first side of the piezoelectric crystal; and an electrode coated on a second side of the piezoelectric crystal, characterized in that:

the support element is a brass plate which has a larger diameter than the piezoelectric crystal.

38 2 Piezoelectric-powered tire revolution counter, according to claim 7, characterized in that:

the piezoelectric crystal is approximately 24 mm in diameter and 0.18 mm in thickness, and is mounted concentrically to the support element which is approximately 42 mm in diameter and 0.22 mm in thickness.

49 2 Piezoelectric-powered tire revolution counter, according to claim 7, characterized in that:

the piezoelectric crystal is composed of lead zirconate-titanate ($\text{Pb}(\text{Zr}_{1-x}\text{Ti}_x)\text{O}_3$).

510 1 Piezoelectric-powered tire revolution counter, according to claim 1, wherein the revolution counting circuit is characterized by:

a signal processing circuit element for processing a signal comprising the energy pulses generated by the piezoelectric element, having a low pass filter for attenuating high frequency signal noise in the energy pulses; a voltage limiter comprising forward and backward biased diodes for limiting voltage and current in the energy pulses; and a Schmitt trigger receiving an output of the forward and backward biased diodes, for converting the energy pulse signal with relatively irregular shape to a clean square wave signal for interfacing with the revolution counting circuit;

a digital logic circuit for counting;

a monostable vibrator circuit element to expand on-time in the square wave signal; and

a microcontroller circuit element with non-volatile data storage for updating a revolution count in its non-volatile data storage, and for making the revolution count available to an optional external reading device.

611 1 Piezoelectric-powered tire revolution counter, according to claim 1, characterized in

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that:

the piezoelectric element is attached to, or embedded within, an inner wall of the pneumatic tire under a tread portion of the pneumatic tire.

REMARKS

The original claims 1-5 have been re-drafted as claims 6-11. Claims 1-5 are cancelled and claims 6-11 are now pending in the referenced application.

Changes in response to the Examiner's Detailed Action are described in remarks hereinbelow. In addition, the claims have been amended in accordance with U.S. practice to remove reference signs that were included in the original application as required for PCT applications.

Priority Date - 35 USC 119(e)

An additional matter concerns the priority date for the present application. The subject Office Action Summary does not have a check mark in box 14). The Applicant respectfully requests acknowledgement of the claim for domestic priority under 35 USC 119(e) as claimed on page 1, lines 7-9 of the application: "This application claims the benefit of US Provisional Patent Application No. 60/092,270, filed 7/10/98 by Ko, et al." The priority date of July 10, 1998 has been acknowledged in the PCT, where the application has an international filing date of July 9, 1999.

Claim Rejections - 35 USC 112

1. Claim 5 was rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
2. In particular, the Examiner pointed out several terms in claim 5 that lack a clear antecedent basis. The original claim 5 has been re-drafted and re-numbered as claim 10. Antecedency has been clarified as follows: The term, "the energy pulses" now has an antecedent in the redrafted independent claim 6. The term, "the signal" has been replaced by "the energy pulses". The term, "the signal pulse" has been replaced by "the square wave signal", using a term introduced earlier in claim 10 by inserting --signal-- after the phrase "relatively irregular shape to a clean square wave". The term, "the revolution count" has been changed to "a revolution count"; and the following reference to, "the count" has been changed to, "the revolution count". Other changes to claim 5 (new claim 10) are discussed in paragraph 4 hereinbelow.